1 **a)** They contain only the elements hydrogen and carbon.

b) i) Alkanes

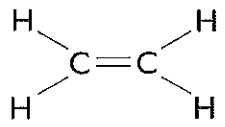
ii) C_nH_{2n+2}

iii) A and D

c) i) Compounds that have the same molecular formula but have different displayed formulae.

ii) None of them have isomers.

d)



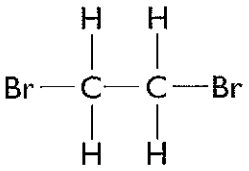
e) $(2 \times 12) + (4 \times 1) = 28$

2 **a)** i) Similar chemical properties and same general formula.

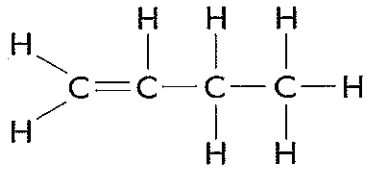
ii) Contains a carbon to carbon double bond (C = C).

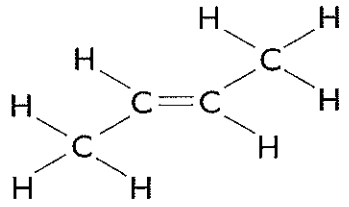
b) i) Orange to colourless.

ii)



c)





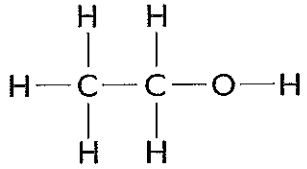
3 **a)** i) Reaction 1 – fermentation; Reaction 2 – dehydration.

ii) Addition.

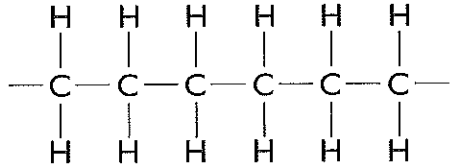
b) Any **two** from
- dissolve the sugar in water
- add yeast
- warm / temperature 25–40°C
- no oxygen / air

c) $C_2H_5OH \rightarrow C_2H_4 + H_2O$

d)



e)



f) Condensation.

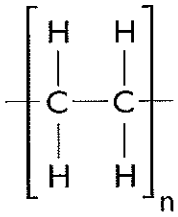
A small molecule, such as water, is also formed along with the polymer.

4 a) i) C or F

ii) A and B

iii) E

b) Poly(ethene) / polythene



5 a) i) It contains oxygen.

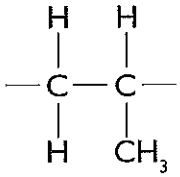
ii) CH_3

iii) A series of compounds that have the same general formula and similar chemical properties.

iv)

v) Poly(propene) / polypropylene

vi)



vii) Compound E has a carbon to carbon double bond / is unsaturated.

The polymer does not have a carbon to carbon double bond / is saturated.

b)